

DOCKET NO.: MTGY0001-101**PATENT****In the Claims:**

The current status of all claims is listed below and supercedes all previous lists of claims.

Please cancel claims 31 and 41, and amend claims 1, 2, 33, and 34 as follows.

1. (currently amended) An isolated nucleic acid molecule encoding a protein comprising an amino acid sequence comprising at least 70% sequence identity to SEQ ID NO: 2, wherein the protein has pro-oxidant activity and comprises SEQ ID NO: 4.
2. (currently amended) An isolated nucleic acid molecule comprising at least 97% identity to SEQ ID NO: 1 encoding a protein that has pro-oxidant activity and comprises SEQ ID NO: 3.
3. (original) The isolated nucleic acid molecule of any of claims 1 or 2, wherein said nucleic acid molecule is operably linked to one or more expression control elements.
4. (original) A vector comprising an isolated nucleic acid molecule of any of claims 1 or 2.
5. (previously presented) An isolated host cell comprising a vector of claim 4.
6. (previously presented) The host cell of claim 5, wherein said host cell is selected from the group consisting of a prokaryotic host cell and a eukaryotic host cell.
7. (withdrawn) A method of producing a polypeptide, comprising the step of culturing a host cell transformed or transfected with a nucleic acid molecule of claim 1 or 2 under conditions in which the polypeptide encoded by said nucleic acid molecule is expressed.
- 8-31. (canceled).

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32. (previously presented) The isolated nucleic acid molecule of claim 1, wherein said encoded polypeptide comprises SEQ ID NO: 2.

33. (currently amended) The isolated nucleic acid molecule of claim 1, wherein said isolated nucleic acid molecule comprises a nucleic acid molecule comprising at least 70% identity to SEQ ID NO: 1 and comprises SEQ ID NO: 3.

34. (currently amended) The isolated nucleic acid molecule of claim 1, wherein said isolated nucleic acid molecule comprises a nucleic acid molecule comprising at least 97% identity to SEQ ID NO: 1 and comprises SEQ ID NO: 3.

35. (previously presented) The isolated nucleic acid molecule of claim 1, wherein said isolated nucleic acid molecule comprises SEQ ID NO: 3.

36. (previously presented) The isolated nucleic acid molecule of claim 1, wherein said nucleic acid molecule comprises SEQ ID NO: 1.

37. (previously presented) The isolated nucleic acid molecule of claim 1, wherein said pro-oxidant activity is nonspecific mtDNA oxidative damage.

38. (previously presented) An isolated nucleic acid molecule complementary to the isolated nucleic acid molecule of claim 1.

39. (previously presented) The isolated nucleic acid molecule of claim 34, wherein said nucleic acid molecule is complementary to SEQ ID NO: 1.

40. (previously presented) The vector of claim 4, wherein said vector is a plasmid or a viral vector.

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41. (canceled).

42. (previously presented) The isolated nucleic acid molecule of claim 2, wherein said nucleic acid molecule comprises SEQ ID NO: 1.